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Local triviality of equivariant algebras

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Abstract

We consider a finite algebra A over a commutative ring R. It is assumed that R is an algebra over the ground field k and that a cocommutative Hopf algebra H acts on R and A in a compatible way. This paper answers the question as to when it is possible to find a ring extension R→R′ such that the R′-algebra A⊗ RR′ is isomorphic with A0⊗ kR′ for some k-algebra A 0 and the ring R′⊗ RR p is faithfully flat over the local ring R p either for a single prime ideal p of R containing no H-stable ideals of R or for all such primes. If k is algebraically closed, it is shown that A has isomorphic reductions modulo any pair of maximal ideals of R with residue field k containing the same H-stable ideals of R. © 2011 London Mathematical Society.

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